DATA VALIDATION REPORT

Gold King Mine Release Incident

SAMPLE DELIVERY GROUP: 680-117145-2

Prepared by

MEC^X
12269 East Vassar Drive
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I. INTRODUCTION

Task Order Title:	Gold King Mine Release Incident
Project No.:	20408.012.001.0274.00 20408.012.001.0267.00
Sample Delivery Group:	680-117145-2
EPA Project Manager:	Steve Way
Weston Project Manager:	Dave Robinson
TDD No.:	0001/1508-04
Matrix:	Water
QC Level:	Stage 2A
No. of Samples:	12
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica- Savannah

Table 1. Sample Identification

Location ID	*Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
CC06_092415_0840	680-117145-18	Water	9/24/15 8:40 AM	200.7, 200.8, 2320B, 2340B, 245.1, 300.0, 4500
GKMSW918_092415	680-117145-14	Water	9/24/15 10:10 AM	200.7, 200.8, 2320B, 2340B, 245.1, 300.0, 4500
GKMTW309_092515	680-117145-28	Water	9/25/15 12:37 PM	200.7, 200.8, 2340B, 245.1
GKMTW629_092315	680-117145-11	Water	9/23/15 1:45 PM	200.7, 200.8, 2340B, 245.1
GKMTW631_092315A	680-117145-9	Water	9/23/15 1:15 PM	200.7, 200.8, 2340B, 245.1
GKMTW631_092315B	680-117145-10	Water	9/23/15 1:25 PM	200.7, 200.8, 2340B, 245.1
GKMTW68_092415B	680-117145-17	Water	9/24/15 1:22 PM	200.7, 200.8, 2340B, 245.1
GKMTW91_092415A	680-117145-15	Water	9/24/15 11:14 AM	200.7, 200.8, 2340B, 245.1
GKMTW91_092415B	680-117145-16	Water	9/24/15 11:35 AM	200.7, 200.8, 2340B, 245.1
GKMTW918_092415A	680-117145-12	Water	9/24/15 9:42 AM	200.7, 200.8, 2340B, 245.1
GKMTW918_092415B	680-117145-13	Water	9/24/15 10:00 AM	200.7, 200.8, 2340B, 245.1
GS_Ponds_092415_1056	680-117145-19	Water	9/24/15 10:56 AM	200.7, 200.8, 2320B, 2340B, 245.1, 300.0, 4500

II. Sample Management

Anomalies regarding sample management are listed below. According to a notation on the chains-of-custody (COCs), the samples were received within the temperature limits of 4°C ±2°C. The samples were received intact, on ice, and properly preserved. The COCs were appropriately signed and dated by field and laboratory personnel. The presence or absence of custody seals on the cooler was not specifically noted.

The following issues were noted:

- A corrections made to the COC was made by overwriting the original entry. The correction was not initialed or dated.
- Dissolved hardness was requested on the COC. Per previous instruction, the laboratory only provided total hardness.
- The COCs did not list CLP sample IDs, and none were provided. The laboratory logged the samples per the location IDs on the COCs.
- The presence or absence of sample tags was not noted in the case narrative, and sample tags were not listed on the COCs.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
UB	The analyte was detected in the sample and in either the associated laboratory blank or field blank. If detected below the reporting limit (RL) the analyte result was reported as non-detected at the RL due to blank contamination. If detected above the RL, the analyte result was reported as non-detected at the reported result due to blank contamination.	The analyte was detected in the sample and in either the associated laboratory blank or field blank. If detected below the reporting limit (RL) the analyte result was reported as non-detected at the RL due to blank contamination. If detected above the RL, the analyte result was reported as non-detected at the reported result due to blank contamination.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential positive bias.
J-	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential negative bias.

Qualifier	Organics	Inorganics
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
UJB	The analyte was detected in the sample and in either the associated laboratory blank or field blank; the analyte result was reported as non-detected at either the RL or the reported result. The reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The analyte was detected in the sample and in either the associated laboratory blank or field blank; the analyte result was reported as non-detected at either the RL or the reported result. The reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995 or calibration was noncompliant.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
L1	LCS/LCSD RPD was outside control limits.	LCS/LCSD RPD was outside control limits.
Q	MS/MSD recovery was poor.	MS recovery was poor.
Q1	MS/MSD RPD was outside control limits.	MS/MSD RPD was outside control limits.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	ICPMS tune was not compliant.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
F1	Field duplicate results were outside the control limit.	Field duplicate results were outside the control limit.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.

Qualifier	Organics	Inorganics
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. Contract Laboratory Program Statement of Work for Inorganic Superfund Methods, 200.7, 200.8, 245.1—Metals and Mercury

Reviewed By: P. Meeks
Date Reviewed: September 28, 2015

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *Sampling and Analysis Plan/Quality Assurance Project Plan for Gold King Mine Release, Silverton, San Juan County, Colorado* (2015), *United States Environmental Protection Agency Contract Laboratory Program Statement of Work for Inorganic Superfund Methods, EPA Methods 200.7, 200.8 and 245.1*, and the *National Functional Guidelines for Inorganic Superfund Data Review* (2010).

- Holding Times: The analytical holding times, 28 days for mercury and six months for the remaining metals, was met.

- Analytical Method Blanks: There were detects reported in the method blanks but they were insufficient to qualify the site samples.

- Laboratory Control Samples (LCS): The recoveries were within laboratory control limits of 85-115%.

- Laboratory Duplicates: Laboratory duplicate analyses were performed on sample GKMSW05_092415 (in related SDG 117145-1) for all analytes. The relative percent differences (RPDs) for total iron (41%), total lead (23%), dissolved copper (26%), and dissolved nickel (53%) exceeded the control limit; therefore, results for these analytes were qualified as estimated (J or UJ) in the surface water samples (all samples except the GKMTW samples). The remaining RPDs were within the QAPP control limit of ≤20%. Based on professional judgment, the control limit was applied only to results ≥5× the reporting limit (RL). Results less than 5× the RL were within the reasonable control limit of ±RL.

- Matrix Spike/Matrix Spike Duplicate (MS/MSD): MS/MSD analyses were performed on the samples below. Two sets of MS/MSD results were reported for parent sample GS_Ponds_092415_1056. Only the set using the reported sample results was assessed; however, the MSD recoveries and MS/MSD RPDs were not reported in the original data package for this sample. As the MSD results were reported, the reviewer calculated the recoveries and RPDs.

Parent Sample	Analysis
CC06_092415_0840	200.7 and 200.8 (total), mercury (dissolved)
GS_Ponds_092415_1056	200.7 and 200.8 (dissolved), mercury (total)

Results were not assessed when the native concentration was more than 4× the spike amount. Dissolved iron (72%/acceptable), total cadmium (136%/139%), and dissolved cobalt (67%/73%) were recovered outside the control limits. Results for these analytes in the surface water samples (all samples except the GKMTW samples) associated with low recoveries (all detects) were qualified as estimated with a potential low bias (J-) and results associated with high recoveries were qualified as estimated with a potential high bias (J+) in the samples. Nondetects were not qualified for high recovery outliers. The remaining recoveries were within the laboratory control limits of 75-125% for the 200.7 analytes and within 70-130% for mercury and the 200.8 analytes. The RPDs were ≤20%.

- Post Digestion Spike (PDS): There were no PDS analyses performed on a sample in this SDG.

- Serial Dilution: There were no serial dilution analyses performed in this SDG.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: No field blank or equipment rinsate samples were identified in this SDG.

    - Field Duplicates: There were no field duplicate samples identified in this SDG.

B. VARIOUS EPA METHODS—General Chemistry

Reviewed By: P. Meeks
Date Reviewed: September 28, 2015

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *Sampling and Analysis Plan/Quality Assurance Project Plan for Gold King Mine Release, Silverton, San Juan County, Colorado* (2015), *United States Environmental Protection Agency Contract Laboratory Program Statement of Work for Inorganic Superfund Methods, EPA Method 300.0, Standard Methods for the Examination of Water and Wastewater 2340B, 2320B, and 4500 H+*, and the *National Functional Guidelines for Superfund Inorganic Data Review* (2010).

- Holding Times: Nitrate-N was analyzed beyond the holding time in samples CC06_092415_0840 and GKMSW918_09241; therefore, the nitrate-N results for these samples were qualified as estimated with a potential low bias (J-) for detects or as estimated (UJ) for nondetects. The pH measurements were performed in a fixed laboratory rather than on-site; therefore all pH results were qualified as estimated (J), as the analysis was not conducted in the field. No bias was assigned as the effect on the pH result could not be ascertained. The remaining holding times, as listed below, were met.

    - Hardness (2340B) – 6 months
    - Alkalinity (2320B) – 14 days
    - Nitrate-N (300.0) - 24 hours
    - Remaining anions (300.0) – 28 days
    - pH (4500 H+) – ASAP

- Analytical Method Blanks: There were no detects in the method blanks.

- Laboratory Control Samples: The analytes utilized in the calculation of hardness were recovered within the metals control limits. The pH recovery was within the laboratory control limits of 63-158% but exceeded the EPA Method 150.1 check standard control limit of ±0.05 at +0.12 pH units; therefore, the pH results were qualified as estimated with a potential high bias (J+). Alkalinity recoveries were within the laboratory control limits of 80-120%, anion recoveries were within the laboratory control limits of 90-110%, and alkalinity and anion RPDs were ≤30%.

- Laboratory Duplicates: Laboratory duplicate analyses were performed on sample GKMSW05_092415 (in related SDG 117145-1) for all analytes, on GS_Ponds_092415_1056 for alkalinity and pH. The pH RPDs were within the laboratory control limit of ≤40% and within the EPA Method 150.1 control limit of ±0.05 pH units. The RPDs for the remaining analytes were within the QAPP control limit of ≤20%.

- Matrix Spike/Matrix Spike Duplicate (MS/MSD): MS/MSD analyses are applicable only to the anion analysis. MS/MSD analyses were performed on sample GKMSW05_092415 (in related SDG 117145-1) for all anions. Results were not assessed when the native concentration was more than 4× the spike amount. Sulfate was recovered at 61% in the MSD. Although a note in the case narrative indicated the results was above the linear range of the calibration, it was the reviewer's opinion the sulfate results in the samples should be qualified as estimated with a potential low bias (J-). The remaining recoveries were within the laboratory control limits of 80-120% and RPDs were within the QAPP control limit of ≤20%.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: There were no field duplicate samples identified in this SDG.

Validated Sample Result Forms: 680-117145-2

Analysis Method 200.7 Rev 4.4

Sample Name GKMTW631_092315B **Matrix Type:** Water

Lab Sample Name: 680-117145-10 **Sample Date:** 9/23/2015 1:25:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	24	200	24	ug/L	U	U	
Calcium	T	7440-70-2	49000	500	25	ug/L			
Iron	T	7439-89-6	110	50	17	ug/L			
Magnesium	T	7439-95-4	9300	500	33	ug/L			
Potassium	T	7440-09-7	1600	1000	17	ug/L			
Sodium	T	7440-23-5	2400	1000	480	ug/L			

Sample Name GKMTW629_092315 **Matrix Type:** Water

Lab Sample Name: 680-117145-11 **Sample Date:** 9/23/2015 1:45:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	24	200	24	ug/L	U	U	
Calcium	T	7440-70-2	57000	500	25	ug/L			
Iron	T	7439-89-6	17	50	17	ug/L	U	U	
Magnesium	T	7439-95-4	10000	500	33	ug/L			
Potassium	T	7440-09-7	1200	1000	17	ug/L			
Sodium	T	7440-23-5	3000	1000	480	ug/L			

Sample Name GKMTW918_092415A **Matrix Type:** Water

Lab Sample Name: 680-117145-12 **Sample Date:** 9/24/2015 9:42:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	24	200	24	ug/L	U	U	
Calcium	T	7440-70-2	160000	500	25	ug/L			
Iron	T	7439-89-6	3400	50	17	ug/L			
Magnesium	T	7439-95-4	19000	500	33	ug/L			
Potassium	T	7440-09-7	1400	1000	17	ug/L			
Sodium	T	7440-23-5	5200	1000	480	ug/L			

Sample Name GKMTW918_092415B **Matrix Type:** Water

Lab Sample Name: 680-117145-13 **Sample Date:** 9/24/2015 10:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	24	200	24	ug/L	U	U	
Calcium	T	7440-70-2	150	500	25	ug/L	J	J	

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Iron	T	7439-89-6	52	50	17	ug/L			
Magnesium	T	7439-95-4	33	500	33	ug/L	U	U	
Potassium	T	7440-09-7	340000	10000	170	ug/L			
Sodium	T	7440-23-5	3100	1000	480	ug/L			

Sample Name GKMSW918_092415 **Matrix Type:** Water

Lab Sample Name: 680-117145-14 **Sample Date:** 9/24/2015 10:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	660	200	24	ug/L			
Aluminum, Dissolved	D	7429-90-5	73	200	24	ug/L	J	J	
Calcium	T	7440-70-2	76000	500	25	ug/L			
Calcium, Dissolved	D	7440-70-2	76000	500	25	ug/L			
Iron	T	7439-89-6	770	50	17	ug/L		J	E
Iron, Dissolved	D	7439-89-6	17	50	17	ug/L	U	UJ	Q
Magnesium	T	7439-95-4	11000	500	33	ug/L			
Magnesium, Dissolved	D	7439-95-4	11000	500	33	ug/L			
Potassium	T	7440-09-7	1300	1000	17	ug/L			
Potassium, Dissolved	D	7440-09-7	1200	1000	17	ug/L			
Sodium	T	7440-23-5	4600	1000	480	ug/L			
Sodium, Dissolved	D	7440-23-5	4600	1000	480	ug/L			

Sample Name GKMTW91_092415A **Matrix Type:** Water

Lab Sample Name: 680-117145-15 **Sample Date:** 9/24/2015 11:14:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	24	200	24	ug/L	U	U	
Calcium	T	7440-70-2	10000	500	25	ug/L			
Iron	T	7439-89-6	17	50	17	ug/L	U	U	
Magnesium	T	7439-95-4	720	500	33	ug/L			
Potassium	T	7440-09-7	490	1000	17	ug/L	J	J	
Sodium	T	7440-23-5	230000	1000	480	ug/L	E		

Sample Name GKMTW91_092415B **Matrix Type:** Water

Lab Sample Name: 680-117145-16 **Sample Date:** 9/24/2015 11:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	24	200	24	ug/L	U	U	
Calcium	T	7440-70-2	1100	500	25	ug/L			
Iron	T	7439-89-6	17	50	17	ug/L	U	U	
Magnesium	T	7439-95-4	84	500	33	ug/L	J	J	
Potassium	T	7440-09-7	360	1000	17	ug/L	J	J	

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Sodium	T		7440-23-5	240000	1000	480	ug/L	E		

Sample Name GKMTW68_092415B **Matrix Type:** Water

Lab Sample Name: 680-117145-17 **Sample Date:** 9/24/2015 1:22:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	24	200	24	ug/L	U	U	
Calcium	T	7440-70-2	70	500	25	ug/L	J	J	
Iron	T	7439-89-6	17	50	17	ug/L	U	U	
Magnesium	T	7439-95-4	33	500	33	ug/L	U	U	
Potassium	T	7440-09-7	110	1000	17	ug/L	J	J	
Sodium	T	7440-23-5	29000	1000	480	ug/L			

Sample Name CC06_092415_0840 **Matrix Type:** Water

Lab Sample Name: 680-117145-18 **Sample Date:** 9/24/2015 8:40:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	24000	200	24	ug/L			
Aluminum, Dissolved	D	7429-90-5	24000	200	24	ug/L			
Calcium	T	7440-70-2	350000	500	25	ug/L			
Calcium, Dissolved	D	7440-70-2	360000	500	25	ug/L			
Iron	T	7439-89-6	100000	50	17	ug/L		J	E
Iron, Dissolved	D	7439-89-6	71000	50	17	ug/L		J-	Q
Magnesium	T	7439-95-4	24000	5000	330	ug/L			
Magnesium, Dissolved	D	7439-95-4	25000	5000	330	ug/L			
Potassium	T	7440-09-7	2200	1000	17	ug/L			
Potassium, Dissolved	D	7440-09-7	2300	1000	17	ug/L			
Sodium	T	7440-23-5	3000	1000	480	ug/L			
Sodium, Dissolved	D	7440-23-5	3100	1000	480	ug/L			

Sample Name GS_Ponds_092415_1056 **Matrix Type:** Water

Lab Sample Name: 680-117145-19 **Sample Date:** 9/24/2015 10:56:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	4600	200	24	ug/L			
Aluminum, Dissolved	D	7429-90-5	1800	200	24	ug/L			
Calcium	T	7440-70-2	320000	500	25	ug/L			
Calcium, Dissolved	D	7440-70-2	350000	500	25	ug/L			
Iron	T	7439-89-6	17000	50	17	ug/L		J	E
Iron, Dissolved	D	7439-89-6	6900	50	17	ug/L	F1	J-	Q
Magnesium	T	7439-95-4	21000	5000	330	ug/L			

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Magnesium, Dissolved	D		7439-95-4	22000	5000	330	ug/L			
Potassium	T		7440-09-7	2200	1000	17	ug/L			
Potassium, Dissolved	D		7440-09-7	2300	1000	17	ug/L			
Sodium	T		7440-23-5	90000	10000	4800	ug/L			
Sodium, Dissolved	D		7440-23-5	99000	10000	4800	ug/L			

Sample Name GKMTW309_092515 **Matrix Type:** Water

Lab Sample Name: 680-117145-28 **Sample Date:** 9/25/2015 12:37:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	24	200	24	ug/L	U	U	
Calcium	T	7440-70-2	51000	500	25	ug/L			
Iron	T	7439-89-6	17	50	17	ug/L	U	U	
Magnesium	T	7439-95-4	6000	500	33	ug/L			
Potassium	T	7440-09-7	1500	1000	17	ug/L			
Sodium	T	7440-23-5	3300	1000	480	ug/L			

Sample Name GKMTW631_092315A **Matrix Type:** Water

Lab Sample Name: 680-117145-9 **Sample Date:** 9/23/2015 1:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	T	7429-90-5	34	200	24	ug/L	J	J	
Calcium	T	7440-70-2	51000	500	25	ug/L			
Iron	T	7439-89-6	7100	50	17	ug/L			
Magnesium	T	7439-95-4	9400	500	33	ug/L			
Potassium	T	7440-09-7	1600	1000	17	ug/L			
Sodium	T	7440-23-5	2400	1000	480	ug/L			

Analysis Method 200.8

Sample Name GKMTW631_092315B **Matrix Type:** Water

Lab Sample Name: 680-117145-10 **Sample Date:** 9/23/2015 1:25:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	53	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.043	0.5	0.043	ug/L	U	U	
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	0.12	0.4	0.12	ug/L	U	U	
Copper	T	7440-50-8	45	1	0.5	ug/L			
Lead	T	7439-92-1	0.091	0.3	0.06	ug/L	J	J	

Analysis Method 200.8

Manganese	T	7439-96-5	1.9	2.5	1.2	ug/L	J	J
Molybdenum	T	7439-98-7	0.74	1	0.45	ug/L	J	J
Nickel	T	7440-02-0	0.88	1	0.4	ug/L	J	J
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U
Vanadium	T	7440-62-2	0.3	1	0.3	ug/L	U	U
Zinc	T	7440-66-6	5.5	20	2.8	ug/L	J	J

Sample Name GKMTW629_092315 **Matrix Type:** Water

Lab Sample Name: 680-117145-11 **Sample Date:** 9/23/2015 1:45:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	37	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.043	0.5	0.043	ug/L	U	U	
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	0.12	0.4	0.12	ug/L	U	U	
Copper	T	7440-50-8	7.2	1	0.5	ug/L			
Lead	T	7439-92-1	0.26	0.3	0.06	ug/L	J	J	
Manganese	T	7439-96-5	1.2	2.5	1.2	ug/L	U	U	
Molybdenum	T	7439-98-7	1	1	0.45	ug/L			
Nickel	T	7440-02-0	0.78	1	0.4	ug/L	J	J	
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U	
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Vanadium	T	7440-62-2	0.3	1	0.3	ug/L	U	U	
Zinc	T	7440-66-6	7.9	20	2.8	ug/L	J	J	

Sample Name GKMTW918_092415A **Matrix Type:** Water

Lab Sample Name: 680-117145-12 **Sample Date:** 9/24/2015 9:42:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	21	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.043	0.5	0.043	ug/L	U	U	
Chromium	T	7440-47-3	1	2	1	ug/L	J	J	
Cobalt	T	7440-48-4	0.34	0.4	0.12	ug/L	J	J	
Copper	T	7440-50-8	6.9	1	0.5	ug/L			

Analysis Method 200.8

Lead	T	7439-92-1	0.49	0.3	0.06	ug/L		
Manganese	T	7439-96-5	9	2.5	1.2	ug/L		
Molybdenum	T	7439-98-7	4.8	1	0.45	ug/L		
Nickel	T	7440-02-0	2.3	1	0.4	ug/L		
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U
Vanadium	T	7440-62-2	0.44	1	0.3	ug/L	J	J
Zinc	T	7440-66-6	24	20	2.8	ug/L		

Sample Name GKMTW918_092415B **Matrix Type:** Water

Lab Sample Name: 680-117145-13 **Sample Date:** 9/24/2015 10:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	0.14	2	0.14	ug/L	U	U	
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.059	0.5	0.043	ug/L	J	J	
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	0.12	0.4	0.12	ug/L	U	U	
Copper	T	7440-50-8	13	1	0.5	ug/L			
Lead	T	7439-92-1	0.097	0.3	0.06	ug/L	J	J	
Manganese	T	7439-96-5	1.2	2.5	1.2	ug/L	U	U	
Molybdenum	T	7439-98-7	5	1	0.45	ug/L			
Nickel	T	7440-02-0	0.4	1	0.4	ug/L	U	U	
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U	
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Vanadium	T	7440-62-2	0.3	1	0.3	ug/L	U	U	
Zinc	T	7440-66-6	2.9	20	2.8	ug/L	J	J	

Sample Name GKMSW918_092415 **Matrix Type:** Water

Lab Sample Name: 680-117145-14 **Sample Date:** 9/24/2015 10:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Antimony, Dissolved	D	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.65	1	0.37	ug/L	J	J	
Arsenic, Dissolved	D	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	79	2	0.14	ug/L			
Barium, Dissolved	D	7440-39-3	77	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	

Analysis Method 200.8

Beryllium, Dissolved	D	7440-41-7	0.15	0.4	0.15	ug/L	U	U		
Cadmium	T	7440-43-9	0.36	0.5	0.043	ug/L	J	J+	Q	
Cadmium, Dissolved	D	7440-43-9	0.17	0.5	0.043	ug/L	J	J		
Chromium	T	7440-47-3	1	2	1	ug/L	U	U		
Chromium, Dissolved	D	7440-47-3	1	2	1	ug/L	U	U		
Cobalt	T	7440-48-4	0.83	0.4	0.12	ug/L				
Cobalt, Dissolved	D	7440-48-4	0.54	0.4	0.12	ug/L		J-	Q	
Copper	T	7440-50-8	10	1	0.5	ug/L				
Copper, Dissolved	D	7440-50-8	2.9	1	0.5	ug/L		J	E	
Lead	T	7439-92-1	2.7	0.3	0.06	ug/L		J	E	
Lead, Dissolved	D	7439-92-1	0.2	0.3	0.06	ug/L	J	J		
Manganese	T	7439-96-5	150	2.5	1.2	ug/L				
Manganese, Dissolved	D	7439-96-5	110	2.5	1.2	ug/L				
Molybdenum	T	7439-98-7	1.2	1	0.45	ug/L				
Molybdenum, Dissolved	D	7439-98-7	1.1	1	0.45	ug/L				
Nickel	T	7440-02-0	1.8	1	0.4	ug/L				
Nickel, Dissolved	D	7440-02-0	2.4	1	0.4	ug/L		J	E	
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U		
Selenium, Dissolved	D	7782-49-2	0.58	2	0.58	ug/L	U	U		
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U		
Silver, Dissolved	D	7440-22-4	0.1	1	0.1	ug/L	U	U		
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U		
Thallium, Dissolved	D	7440-28-0	0.1	0.2	0.1	ug/L	U	U		
Vanadium	T	7440-62-2	0.81	1	0.3	ug/L	J	J		
Vanadium, Dissolved	D	7440-62-2	0.3	1	0.3	ug/L	U	U		
Zinc	T	7440-66-6	120	20	2.8	ug/L				
Zinc, Dissolved	D	7440-66-6	40	20	2.8	ug/L				

Sample Name GKMTW91_092415A **Matrix Type:** Water

Lab Sample Name: 680-117145-15 **Sample Date:** 9/24/2015 11:14:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	2.8	1	0.37	ug/L			
Barium	T	7440-39-3	53	2	0.14	ug/L	B		
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.08	0.5	0.043	ug/L	J	J	
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	0.12	0.4	0.12	ug/L	U	U	
Copper	T	7440-50-8	16	1	0.5	ug/L			
Lead	T	7439-92-1	0.81	0.3	0.06	ug/L			

Analysis Method 200.8

Manganese	T	7439-96-5	1.2	2.5	1.2	ug/L	U	U
Molybdenum	T	7439-98-7	16	1	0.45	ug/L		
Nickel	T	7440-02-0	0.91	1	0.4	ug/L	J	J
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U
Vanadium	T	7440-62-2	0.57	1	0.3	ug/L	J	J
Zinc	T	7440-66-6	16	20	2.8	ug/L	J	J

Sample Name GKMTW91_092415B **Matrix Type:** Water

Lab Sample Name: 680-117145-16 **Sample Date:** 9/24/2015 11:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	2.5	1	0.37	ug/L			
Barium	T	7440-39-3	6.2	2	0.14	ug/L	B		
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.043	0.5	0.043	ug/L	U	U	
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	0.12	0.4	0.12	ug/L	U	U	
Copper	T	7440-50-8	21	1	0.5	ug/L			
Lead	T	7439-92-1	1.3	0.3	0.06	ug/L			
Manganese	T	7439-96-5	1.2	2.5	1.2	ug/L	U	U	
Molybdenum	T	7439-98-7	16	1	0.45	ug/L			
Nickel	T	7440-02-0	0.88	1	0.4	ug/L	J	J	
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U	
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Vanadium	T	7440-62-2	0.3	1	0.3	ug/L	U	U	
Zinc	T	7440-66-6	97	20	2.8	ug/L			

Sample Name GKMTW68_092415B **Matrix Type:** Water

Lab Sample Name: 680-117145-17 **Sample Date:** 9/24/2015 1:22:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	0.14	2	0.14	ug/L	U	U	
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.074	0.5	0.043	ug/L	J	J	
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	0.12	0.4	0.12	ug/L	U	U	
Copper	T	7440-50-8	19	1	0.5	ug/L			

Analysis Method 200.8

Lead	T	7439-92-1	0.15	0.3	0.06	ug/L	J	J		
Manganese	T	7439-96-5	1.2	2.5	1.2	ug/L	U	U		
Molybdenum	T	7439-98-7	0.45	1	0.45	ug/L	U	U		
Nickel	T	7440-02-0	0.5	1	0.4	ug/L	J	J		
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U		
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U		
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U		
Vanadium	T	7440-62-2	0.3	1	0.3	ug/L	U	U		
Zinc	T	7440-66-6	13	20	2.8	ug/L	J	J		

Sample Name CC06_092415_0840 **Matrix Type:** Water

Lab Sample Name: 680-117145-18 **Sample Date:** 9/24/2015 8:40:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	2.8	1	0.4	ug/L			
Antimony, Dissolved	D	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	33	1	0.37	ug/L			
Arsenic, Dissolved	D	7440-38-2	2	1	0.37	ug/L			
Barium	T	7440-39-3	9.5	2	0.14	ug/L	B		
Barium, Dissolved	D	7440-39-3	11	2	0.14	ug/L			
Beryllium	T	7440-41-7	11	4	1.5	ug/L			
Beryllium, Dissolved	D	7440-41-7	11	4	1.5	ug/L			
Cadmium	T	7440-43-9	67	0.5	0.043	ug/L	F1	J+	Q
Cadmium, Dissolved	D	7440-43-9	69	0.5	0.043	ug/L			
Chromium	T	7440-47-3	3.1	2	1	ug/L			
Chromium, Dissolved	D	7440-47-3	1.7	2	1	ug/L	J	J	
Cobalt	T	7440-48-4	90	0.4	0.12	ug/L			
Cobalt, Dissolved	D	7440-48-4	93	0.4	0.12	ug/L		J-	Q
Copper	T	7440-50-8	5100	10	5	ug/L			
Copper, Dissolved	D	7440-50-8	5300	10	5	ug/L		J	E
Lead	T	7439-92-1	34	0.3	0.06	ug/L		J	E
Lead, Dissolved	D	7439-92-1	27	0.3	0.06	ug/L			
Manganese	T	7439-96-5	30000	25	12	ug/L			
Manganese, Dissolved	D	7439-96-5	31000	25	12	ug/L			
Molybdenum	T	7439-98-7	3.9	1	0.45	ug/L			
Molybdenum, Dissolved	D	7439-98-7	0.45	1	0.45	ug/L	J	J	
Nickel	T	7440-02-0	51	1	0.4	ug/L			
Nickel, Dissolved	D	7440-02-0	53	1	0.4	ug/L		J	E
Selenium	T	7782-49-2	1.8	2	0.58	ug/L	J	J	
Selenium, Dissolved	D	7782-49-2	2	2	0.58	ug/L			
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U F2	U	

Analysis Method 200.8

Silver, Dissolved	D	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.26	0.2	0.1	ug/L			
Thallium, Dissolved	D	7440-28-0	0.26	0.2	0.1	ug/L			
Vanadium	T	7440-62-2	23	1	0.3	ug/L			
Vanadium, Dissolved	D	7440-62-2	0.98	1	0.3	ug/L	J	J	
Zinc	T	7440-66-6	23000	200	28	ug/L			
Zinc, Dissolved	D	7440-66-6	24000	200	28	ug/L			

Sample Name GS_Ponds_092415_1056 **Matrix Type:** Water

Lab Sample Name: 680-117145-19 **Sample Date:** 9/24/2015 10:56:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.5	1	0.4	ug/L	J	J	
Antimony, Dissolved	D	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	3.6	1	0.37	ug/L			
Arsenic, Dissolved	D	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	18	2	0.14	ug/L	B		
Barium, Dissolved	D	7440-39-3	15	2	0.14	ug/L			
Beryllium	T	7440-41-7	1.8	0.4	0.15	ug/L			
Beryllium, Dissolved	D	7440-41-7	0.96	0.4	0.15	ug/L			
Cadmium	T	7440-43-9	37	0.5	0.043	ug/L		J+	Q
Cadmium, Dissolved	D	7440-43-9	35	0.5	0.043	ug/L			
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Chromium, Dissolved	D	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	68	0.4	0.12	ug/L			
Cobalt, Dissolved	D	7440-48-4	71	0.4	0.12	ug/L	F1	J-	Q
Copper	T	7440-50-8	670	1	0.5	ug/L			
Copper, Dissolved	D	7440-50-8	330	1	0.5	ug/L		J	E
Lead	T	7439-92-1	19	0.3	0.06	ug/L		J	E
Lead, Dissolved	D	7439-92-1	0.41	0.3	0.06	ug/L			
Manganese	T	7439-96-5	24000	25	12	ug/L			
Manganese, Dissolved	D	7439-96-5	25000	25	12	ug/L			
Molybdenum	T	7439-98-7	0.83	1	0.45	ug/L	J	J	
Molybdenum, Dissolved	D	7439-98-7	0.46	1	0.45	ug/L	J	J	
Nickel	T	7440-02-0	31	1	0.4	ug/L			
Nickel, Dissolved	D	7440-02-0	33	1	0.4	ug/L		J	E
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U	
Selenium, Dissolved	D	7782-49-2	0.58	2	0.58	ug/L	U	U	
Silver	T	7440-22-4	0.1	1	0.1	ug/L	J	J	
Silver, Dissolved	D	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.14	0.2	0.1	ug/L	J	J	

Analysis Method 200.8

Thallium, Dissolved	D	7440-28-0	0.13	0.2	0.1	ug/L	J	J
Vanadium	T	7440-62-2	3.3	1	0.3	ug/L		
Vanadium, Dissolved	D	7440-62-2	0.43	1	0.3	ug/L	J	J
Zinc	T	7440-66-6	9900	200	28	ug/L		
Zinc, Dissolved	D	7440-66-6	9900	200	28	ug/L		

Sample Name GKMTW309_092515 **Matrix Type:** Water

Lab Sample Name: 680-117145-28 **Sample Date:** 9/25/2015 12:37:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	63	2	0.14	ug/L	B		
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.064	0.5	0.043	ug/L	J	J	
Chromium	T	7440-47-3	1	2	1	ug/L	U	U	
Cobalt	T	7440-48-4	0.12	0.4	0.12	ug/L	J	J	
Copper	T	7440-50-8	26	1	0.5	ug/L			
Lead	T	7439-92-1	0.32	0.3	0.06	ug/L			
Manganese	T	7439-96-5	1.7	2.5	1.2	ug/L	J	J	
Molybdenum	T	7439-98-7	0.45	1	0.45	ug/L	U	U	
Nickel	T	7440-02-0	0.76	1	0.4	ug/L	J	J	
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U	
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U	
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U	
Vanadium	T	7440-62-2	0.3	1	0.3	ug/L	U	U	
Zinc	T	7440-66-6	9.1	20	2.8	ug/L	J	J	

Sample Name GKMTW631_092315A **Matrix Type:** Water

Lab Sample Name: 680-117145-9 **Sample Date:** 9/23/2015 1:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	T	7440-36-0	0.4	1	0.4	ug/L	U	U	
Arsenic	T	7440-38-2	0.37	1	0.37	ug/L	U	U	
Barium	T	7440-39-3	57	2	0.14	ug/L			
Beryllium	T	7440-41-7	0.15	0.4	0.15	ug/L	U	U	
Cadmium	T	7440-43-9	0.043	0.5	0.043	ug/L	U	U	
Chromium	T	7440-47-3	2.4	2	1	ug/L			
Cobalt	T	7440-48-4	0.45	0.4	0.12	ug/L			
Copper	T	7440-50-8	64	1	0.5	ug/L			
Lead	T	7439-92-1	2.7	0.3	0.06	ug/L			
Manganese	T	7439-96-5	37	2.5	1.2	ug/L			
Molybdenum	T	7439-98-7	1	1	0.45	ug/L			

Analysis Method 200.8

Nickel	T	7440-02-0	1.9	1	0.4	ug/L		
Selenium	T	7782-49-2	0.58	2	0.58	ug/L	U	U
Silver	T	7440-22-4	0.1	1	0.1	ug/L	U	U
Thallium	T	7440-28-0	0.1	0.2	0.1	ug/L	U	U
Vanadium	T	7440-62-2	1	1	0.3	ug/L		
Zinc	T	7440-66-6	79	20	2.8	ug/L		

Analysis Method 2320B-2011

Sample Name GKMSW918_092415 **Matrix Type:** Water

Lab Sample Name: 680-117145-14 **Sample Date:** 9/24/2015 10:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Alkalinity	T	STL00171	94	5	5	mg/L			

Sample Name CC06_092415_0840 **Matrix Type:** Water

Lab Sample Name: 680-117145-18 **Sample Date:** 9/24/2015 8:40:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Alkalinity	T	STL00171	5	5	5	mg/L	U	U	

Sample Name GS_Ponds_092415_1056 **Matrix Type:** Water

Lab Sample Name: 680-117145-19 **Sample Date:** 9/24/2015 10:56:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Alkalinity	T	STL00171	5	5	5	mg/L	U	U	

Analysis Method 2340B-2011

Sample Name GKMTW631_092315B **Matrix Type:** Water

Lab Sample Name: 680-117145-10 **Sample Date:** 9/23/2015 1:25:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	160	3.3	3.3	mg/L			

Sample Name GKMTW629_092315 **Matrix Type:** Water

Lab Sample Name: 680-117145-11 **Sample Date:** 9/23/2015 1:45:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	190	3.3	3.3	mg/L			

Sample Name GKMTW918_092415A **Matrix Type:** Water

Lab Sample Name: 680-117145-12 **Sample Date:** 9/24/2015 9:42:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes

Analysis Method 2340B-2011

Total Hardness	T	STL00009	470	3.3	3.3	mg/L				

Sample Name GKMTW918_092415B **Matrix Type:** Water

Lab Sample Name: 680-117145-13 **Sample Date:** 9/24/2015 10:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	3.3	3.3	3.3	mg/L	U	U	

Sample Name GKMSW918_092415 **Matrix Type:** Water

Lab Sample Name: 680-117145-14 **Sample Date:** 9/24/2015 10:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	230	3.3	3.3	mg/L			

Sample Name GKMTW91_092415A **Matrix Type:** Water

Lab Sample Name: 680-117145-15 **Sample Date:** 9/24/2015 11:14:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	28	3.3	3.3	mg/L			

Sample Name GKMTW91_092415B **Matrix Type:** Water

Lab Sample Name: 680-117145-16 **Sample Date:** 9/24/2015 11:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	3.3	3.3	3.3	mg/L	U	U	

Sample Name GKMTW68_092415B **Matrix Type:** Water

Lab Sample Name: 680-117145-17 **Sample Date:** 9/24/2015 1:22:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	3.3	3.3	3.3	mg/L	U	U	

Sample Name CC06_092415_0840 **Matrix Type:** Water

Lab Sample Name: 680-117145-18 **Sample Date:** 9/24/2015 8:40:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	970	3.3	3.3	mg/L			

Sample Name GS_Ponds_092415_1056 **Matrix Type:** Water

Lab Sample Name: 680-117145-19 **Sample Date:** 9/24/2015 10:56:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	880	3.3	3.3	mg/L			

Analysis Method 2340B-2011

Sample Name GKMTW309_092515 **Matrix Type:** Water

Lab Sample Name: 680-117145-28 **Sample Date:** 9/25/2015 12:37:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	150	3.3	3.3	mg/L			

Sample Name GKMTW631_092315A **Matrix Type:** Water

Lab Sample Name: 680-117145-9 **Sample Date:** 9/23/2015 1:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Hardness	T	STL00009	170	3.3	3.3	mg/L			

Analysis Method 245.1

Sample Name GKMTW631_092315B **Matrix Type:** Water

Lab Sample Name: 680-117145-10 **Sample Date:** 9/23/2015 1:25:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name GKMTW629_092315 **Matrix Type:** Water

Lab Sample Name: 680-117145-11 **Sample Date:** 9/23/2015 1:45:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name GKMTW918_092415A **Matrix Type:** Water

Lab Sample Name: 680-117145-12 **Sample Date:** 9/24/2015 9:42:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name GKMTW918_092415B **Matrix Type:** Water

Lab Sample Name: 680-117145-13 **Sample Date:** 9/24/2015 10:00:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name GKMSW918_092415 **Matrix Type:** Water

Lab Sample Name: 680-117145-14 **Sample Date:** 9/24/2015 10:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Analysis Method 245.1

Mercury, Dissolved	D	7439-97-6	0.08	0.2	0.08	ug/L	U	U

Sample Name GKMTW91_092415A **Matrix Type:** Water

Lab Sample Name: 680-117145-15 **Sample Date:** 9/24/2015 11:14:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name GKMTW91_092415B **Matrix Type:** Water

Lab Sample Name: 680-117145-16 **Sample Date:** 9/24/2015 11:35:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name GKMTW68_092415B **Matrix Type:** Water

Lab Sample Name: 680-117145-17 **Sample Date:** 9/24/2015 1:22:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name CC06_092415_0840 **Matrix Type:** Water

Lab Sample Name: 680-117145-18 **Sample Date:** 9/24/2015 8:40:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	
Mercury, Dissolved	D	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name GS_Ponds_092415_1056 **Matrix Type:** Water

Lab Sample Name: 680-117145-19 **Sample Date:** 9/24/2015 10:56:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	
Mercury, Dissolved	D	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Sample Name GKMTW309_092515 **Matrix Type:** Water

Lab Sample Name: 680-117145-28 **Sample Date:** 9/25/2015 12:37:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Analysis Method 245.1

Sample Name GKMTW631_092315A **Matrix Type:** Water

Lab Sample Name: 680-117145-9 **Sample Date:** 9/23/2015 1:15:00 PM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	T	7439-97-6	0.08	0.2	0.08	ug/L	U	U	

Analysis Method 300.0

Sample Name GKMSW918_092415 **Matrix Type:** Water

Lab Sample Name: 680-117145-14 **Sample Date:** 9/24/2015 10:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chloride	T	16887-00-6	1.9	0.5	0.2	mg/L			
Fluoride	T	16984-48-8	0.27	0.1	0.04	mg/L			
Nitrate as N	T	14797-55-8	0.11	0.05	0.023	mg/L	H	J-	H
Sulfate	T	14808-79-8	150	5	2	mg/L		J-	Q

Sample Name CC06_092415_0840 **Matrix Type:** Water

Lab Sample Name: 680-117145-18 **Sample Date:** 9/24/2015 8:40:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chloride	T	16887-00-6	0.49	1	0.4	mg/L	J	J	
Fluoride	T	16984-48-8	9.8	0.2	0.08	mg/L			
Nitrate as N	T	14797-55-8	0.023	0.05	0.023	mg/L	U H	UJ	H
Sulfate	T	14808-79-8	1500	50	20	mg/L		J-	Q

Sample Name GS_Ponds_092415_1056 **Matrix Type:** Water

Lab Sample Name: 680-117145-19 **Sample Date:** 9/24/2015 10:56:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chloride	T	16887-00-6	0.59	1	0.4	mg/L	J	J	
Fluoride	T	16984-48-8	3.8	0.2	0.08	mg/L			
Nitrate as N	T	14797-55-8	0.023	0.05	0.023	mg/L	U	U	
Sulfate	T	14808-79-8	1200	50	20	mg/L		J-	Q

Analysis Method 4500 H+ B-2011

Sample Name GKMSW918_092415 **Matrix Type:** Water

Lab Sample Name: 680-117145-14 **Sample Date:** 9/24/2015 10:10:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
pH	T	STL00204	8.05			SU	HF	J+	H, L

Analysis Method 4500 H+ B-2011

Sample Name CC06_092415_0840 **Matrix Type:** Water

Lab Sample Name: 680-117145-18 **Sample Date:** 9/24/2015 8:40:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
pH	T	STL00204	3.3			SU	HF	J+	H, L

Sample Name GS_Ponds_092415_1056 **Matrix Type:** Water

Lab Sample Name: 680-117145-19 **Sample Date:** 9/24/2015 10:56:00 AM

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
pH	T	STL00204	5.24			SU	HF	J+	H, L